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LOGISTICS OPERATIONS MANAGEMENT CENTER

MAINTENANCE SUPPORT BASELINE (MSB)

International Space Station Alpha

National Aeronautics and
Space Administration
John F. Kennedy Space Center

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ABS: The Logistics Operations Management Center Maintenance Support Baseline is defined. A historical record of systems, applied to and deleted from, designs in support of future management and/or technical analysis is provided. All Flight elements, Ground Support Equipment, Facility Systems and Equipment and Test Support Equipment for which LOMC has

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responsibilities at Kennedy Space Center and other locations are listed. International Space Station Alpha Program documentation is supplemented. The responsibility of the Space Station Launch Site Support Office is established.

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LOMC MAINTENANCE SUPPORT BASELINE (LOMC-MSB)

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LOMC MAINTENANCE SUPPORT BASELINE (LOMC-MSB)

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LOGISTICS OPERATIONS MANAGEMENT CENTER MAINTENANCE SUPPORT BASELINE (LOMC-MSB)

3 JANUARY 1995

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PREFACE

The objective of this document is to define the Logistics Operations Management Center Maintenance Support Baseline and to provide a historical record of systems, applied to and deleted from, designs in support of future management and/or technical analysis.

This plan supplements International Space Station Alpha Program documentation and establishes the responsibility of the Space Station Logistics Support Office (CM-INT-4) function in the Space Station Launch Site Support Office (CM-INT). The development and maintenance of this plan are the responsibility of the Space Station Logistics Support Office (CM-INT-4).

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ABBREVIATIONS AND ACRONYMS

ADP	Acceptance Data Package
AIT	Analytical Integration Team
CM	Kennedy Space Center Payload Management and Operations Directorate
CM-INT	Space Station Launch Site Support Office
CM-INT-4	Kennedy Space Center Space Station Logistics Support Office
DMC	Depot Maintenance Contractor
FS & E	Facilities Systems and Equipment
GSE	Ground Support Equipment
IDMM	Intermediate/Depot Maintenance Manual
ILS	Integrated Logistics Support
IPR	Interim Problem Report
IPT	Integrated Product Team
ISSA	International Space Station Alpha
KSC	Kennedy Space Center
LOMC	Logistics Operations Management Center
LRU	Line Replaceable Unit
LSGSM	Launch Site GSE Management System
MSB	Maintenance Support Baseline
MTE	Maintenance Test Equipment
NASA	National Aeronautics and Space Administration
O & M	Operations and Maintenance
OEM	Original Equipment Manufacturer
OPR	Office of Primary Responsibility
ORU	Orbital Replaceable Unit
PGOC	Payload Ground Operations Contractor
PR	Problem Report
RM-ENG	Kennedy Space Center Quality Engineering Division
RO-PAY	Kennedy Space Center Quality Assurance Division
SM & R	Source, Maintenance & Recoverability
SOW	Statement of Work

ABBREVIATIONS AND ACRONYMS (Cont.)

SRU	Shop Replaceable Unit
TPS	Test Preparation Sheet
TSE	Test Support Equipment
UPN	Unique Project Number
WO	Work Order

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SECTION I
INTRODUCTION

1.1 PURPOSE

The purpose of this document is to identify the equipment and systems that make up the Logistics Operations Management Center Maintenance Support Baseline (LOMC-MSB) and to describe the organizational and functional requirements of the maintenance management infrastructure. All Flight elements, Ground Support Equipment (GSE), Facility Systems and Equipment (FS & E) and Test Support Equipment (TSE) for which the LOMC has logistics responsibilities at Kennedy Space Center (KSC) and other locations will be listed herein.

1.2 SCOPE/APPLICABILITY

This baseline is applicable to the Directorate of Payload Management and Operations (CM), Space Station Launch Site Support Office (CM-INT), Logistic Support Office (CM-INT-4) and its contractors to the extent specified in their contracts, the Space Station Prime Contractor and their Subcontractors. This baseline is a living document that will be updated as design of each new or existing system matures. This baseline will be incorporated into specific documentation as directed by the KSC Space Station Logistics Operations Management Center (LOMC) Integrated Product Team (IPT).

1.3 AUTHORITY/DOCUMENTATION HIERARCHY

This document has been released under the authority of the KSC Space Station LOMC IPT. The Space Station Logistics and Maintenance IPT documentation provides Program level policy and guidance. The Space Station Operational Logistics Plans, K-SS-12 series, and other appropriate documentation provides the procedures necessary to implement the policies set forth in this document. The LOMC IPT Documentation Tree (Figure 1-1), provides the documentation structure under which this document is released.

1.4 SUPPORTING GUIDANCE

Equipment readiness is driven by a successful maintenance program. The KSC Maintenance Management System must provide International Space Station Alpha (ISSA) equipment and systems, properly configured to meet mission needs and all safety and operational criteria. The purpose of the maintenance function is to provide, on a sustained basis, mission ready equipment at the time and place needed. Long term equipment operability and cost containment may be maintained by:

a. reduction of turnaround time through optimization of manpower, facilities and equipment capabilities to support operational requirements.

b. mission oriented organization, training and equipment to support maintenance.

c. planning and scheduling around changing manpower, facility, and equipment requirements.

d. advocating the continuing development of automated information systems and procedures that enhance productivity. The goal is to improve efficiency through elimination of non-productive, manpower intensive administrative tasks.

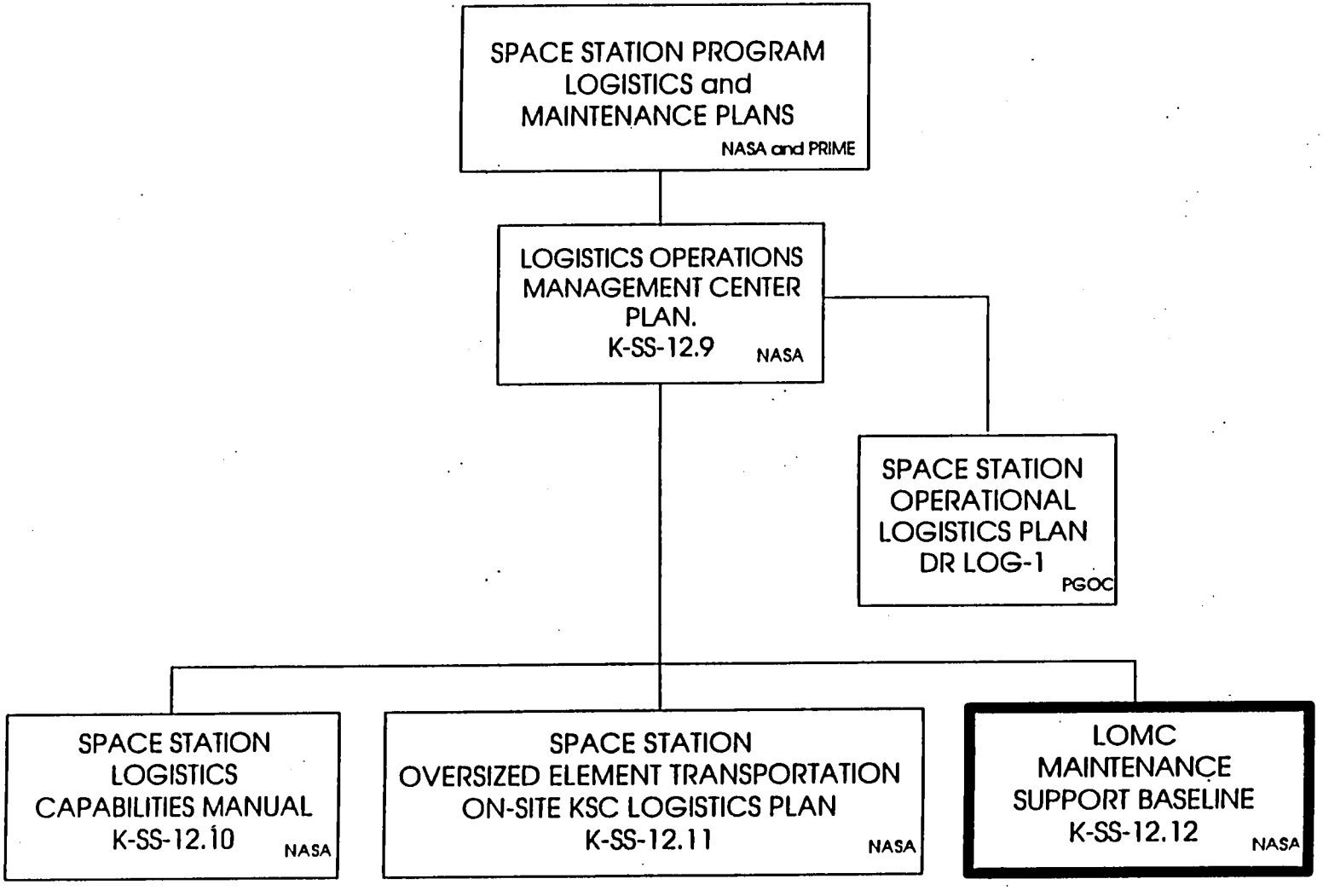

Figure 1-1. LOGISTICS OPERATIONS MANAGEMENT CENTER (LOMC) INTEGRATED PRODUCT TEAM (IPT) DOCUMENTATION TREE

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SECTION II
LOGISTICS MANAGEMENT

2.1 LOGISTICS MANAGEMENT

The KSC Logistics Support Office (CM-INT-4) will establish and publish policies for effective management of the equipment maintenance functions. These policies and procedures assign responsibilities at the various levels of management. The Space Station Launch Site Support Office and KSC Payload Management and Operations Directorate (Figures 2-1 & 2-2 respectively) provide the requirements and direction for the use and repair of listed systems and equipment.

2.1.1 The LOMC IPT will:

a. establish maintenance concepts, plans, and requirements for the on-line and off-line maintenance for systems and equipment life cycle.

b. provide staff support and assistance as required to ensure the maintenance concepts are effectively implemented.

c. identify budget and funding requirements.

d. propose maintenance concept changes in sufficient time to allow programming of required resources, including technical data, equipment, training and spare parts.

e. project maintenance requirements into the Integrated Logistics Support (ILS) plan for ISSA support, identifying maintenance profiles consistent with operational needs.

f. assist with the identification and use of inter-center maintenance support capabilities as necessary for improved support.

2.1.2 The Payload Ground Operations Contractor (PGOC) will:

a. coordinate requirements, capabilities, functional responsibilities and accomplishment of maintenance actions, outlined in this plan with CM-INT-4.

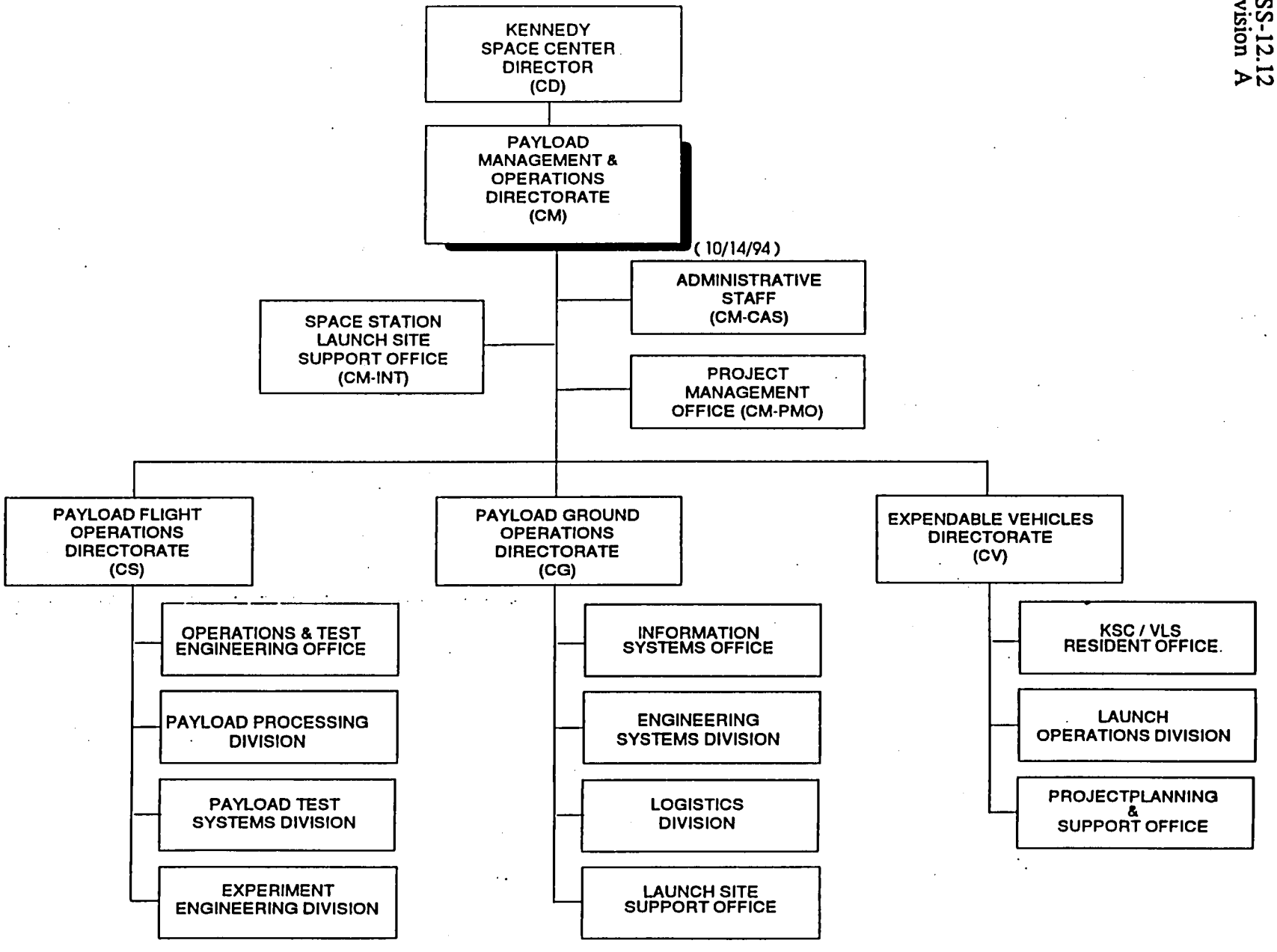

Figure 2-1. PAYLOAD MANAGEMENT AND OPERATIONS DIRECTORATE

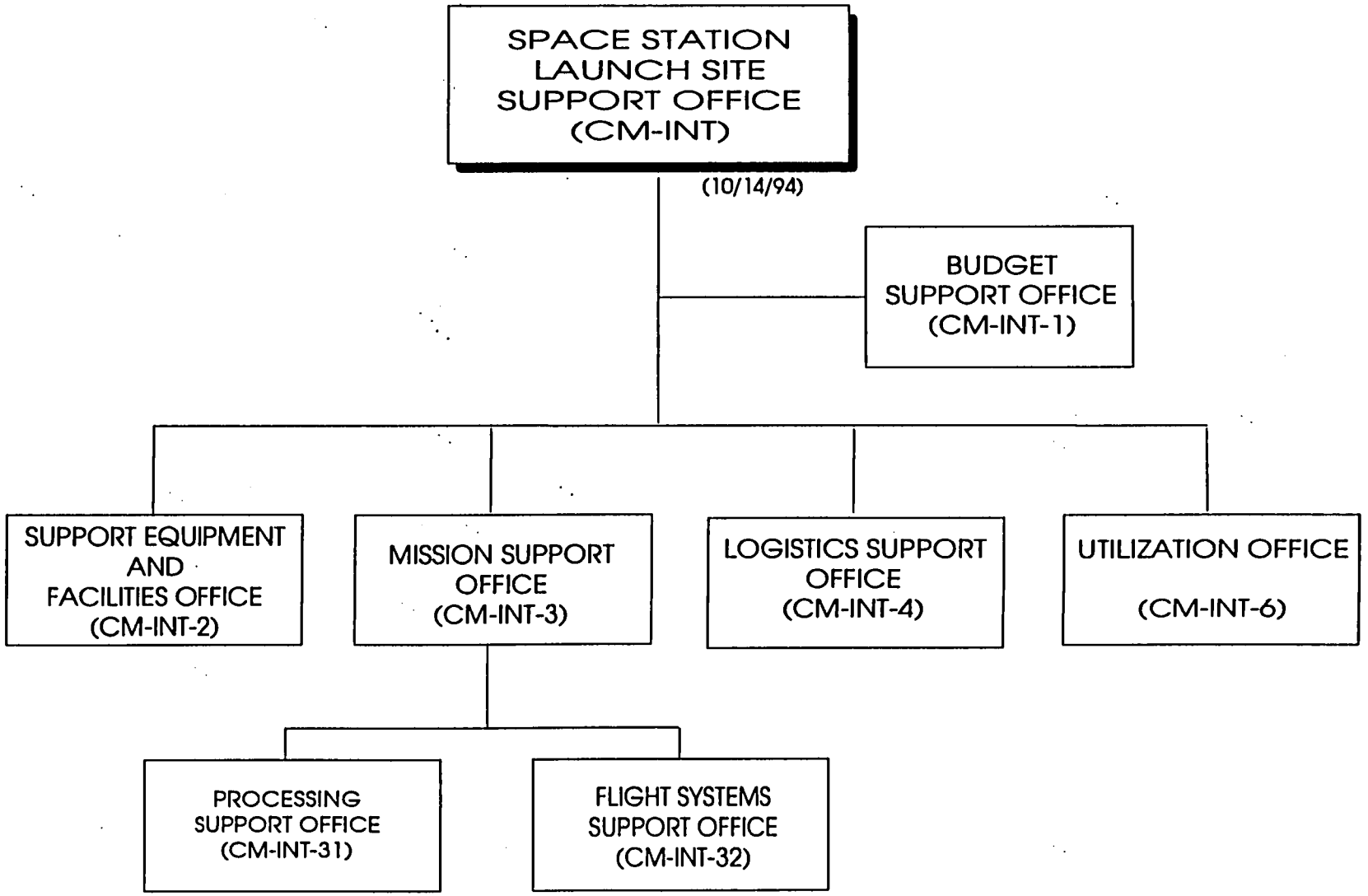

Figure 2-2. SPACE STATION LAUNCH SITE SUPPORT OFFICE

b. ensure maintenance management participates in all pertinent planning, programming and budgeting actions.

c. plan and implement a comprehensive training program to sustain workforce qualifications and capabilities.

d. ensure quality maintenance performance, to include complete and accurate reporting.

e. provide an adequate number of maintenance personnel with the proper skills mix.

f. interface with operations to identify maintenance support requirements, and work with program control and other support activities to provide required resources.

g. control and coordinate the assignment and utilization of maintenance facilities and, based on mission needs, submit requirements for new facilities and/or modification to existing facilities.

h. provide financial management of the maintenance program.

i. ensure quality performance by monitoring and assessing the maintenance program and documenting processes and procedures for appropriate management action.

The PGOC's logistics organization supporting off-line maintenance and automation is shown in Figure 2-3.

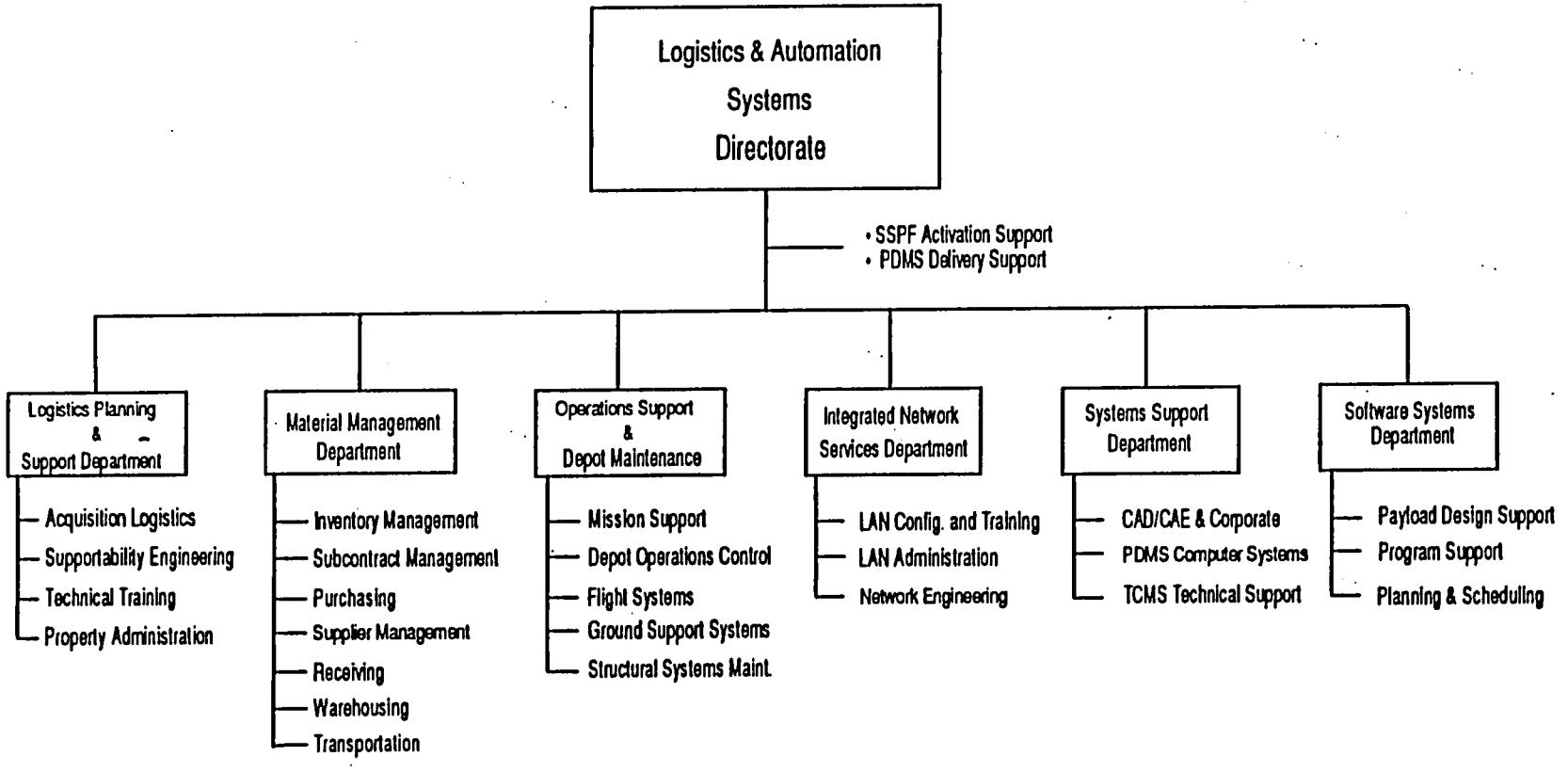

Figure 2-3. Logistics & Automation Systems Directorate
McDonnell Douglas Space & Defense Systems Kennedy Space Center Division

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SECTION III
LOGISTICS SUPPORT ELEMENTS

3.1 MANPOWER

Manpower requirements will be determined by conventional methods and procedures consistent with established policies. These requirements are used to develop the maintenance manpower needs for the NASA and contractor budget process. Funded authorizations are allocated by NASA Headquarters by Unique Project Number (UPN). The following manpower requirements groundrules are to be used in the acquisition, distribution and sustaining of skills mix for logistics support personnel.

a. Ensure maintenance manpower is available to meet mission requirements. Manpower utilization documents will be developed that are consistent with approved NASA and contractor manpower standards. These documents will be used as a reference for new requirements staffing.

b. Manpower requirements will be identified with sufficient lead time to allow for recruiting, training and assignment of personnel.

c. The contractor has the latitude to distribute the maintenance manpower depending on the mission requirement process throughout the maintenance organization, providing that, approved manning levels and skills mix are maintained. When such action will not provide the correct skills mix for maintenance operations, temporary manpower may be added by the contractor providing overall contractor authorized manning levels are not exceeded.

3.2 TRAINING

One key to a successful maintenance program is a properly trained, stable workforce that is experienced in repair procedures and techniques. Maintenance training is dependent upon proper classification of personnel, utilization and training policies which are responsive to mission needs and adequate planning to project technological and economic requirements.

a. Training should be designed to emphasize maximum use of limited resources at the system level rather than the sub-system level.

b. Training policies must emphasize standardization and system level qualifications.

(1) The contractor will identify, by skill, specific task requirements for the various skill levels.

(2) Standardized training will be provided to all new personnel. Specialized system training must be provided to all personnel, when maintaining or operating specialized systems.

(3) Formal training will be equipment and system specific and will concentrate on "Hands on" application to the maximum extent possible.

3.3 MAINTENANCE DOCUMENTATION

Standardized Procedures are the basis for ensuring consistent results from repetitive tasks. Strict adherence to Standardized Procedures, with inherent quality check points, is essential to providing a consistently reliable product. All documentation must be configuration controlled, highly accessible to the user, and have any change highly visible and approved by quality prior to use.

3.4 MATERIAL SUPPORT

The Payload contractor must provide simple and fast processes for getting the right part to the right place at the right time. This system must provide efficient interface compatibilities with the KSC ORU/LRU/SRU repair processing flow (Figure 3-1) and on-line inventory systems. Asset visibility must be accessible by all echelons of management and processing. Material support may be optimized by implementing:

a. a simple, direct and controllable material to maintenance interface system.

b. a material support organization responsive to maintenance needs, delivery times and maintenance priorities.

c. when practical, a storage facility where spares, repair parts and supplies are conveniently located near the maintenance facility.

d. operating procedures that respond to priorities identified by maintenance management.

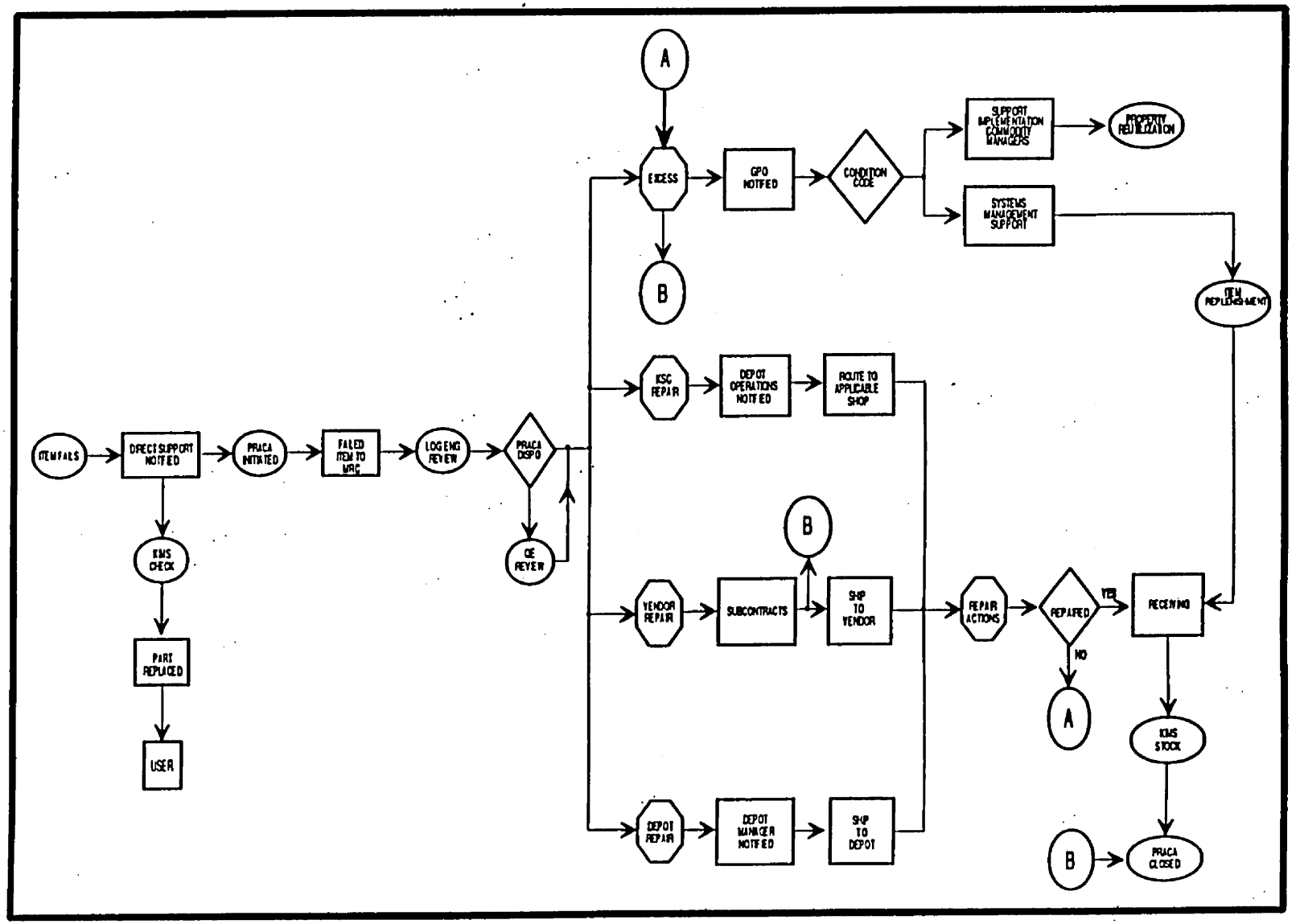

Figure 3-1. ORU/LRU/SRU REPAIR PROCESSING FLOW

e. processes to identify and control alternate methods of satisfying material demands. Alternate methods may include, but are not be limited to:

(1) Cannibalization of parts

(2) Local manufacture

g. a requirements verses stock inventory to periodically purge no longer required spares, piece parts and supplies.

h. existing resources to support ISSA requirements rather than developing unique or stand-alone capabilities.

3.5 MANAGEMENT INFORMATION SYSTEMS

These systems are an integral part of maintenance management and are essential tools for collecting, processing, storing and retrieving data generated by maintenance activities. The following system aspects should be included in the planning, development or upgrade of the information system to ensure response to user needs:

a. minimize and simplify data input requirements.

b. the capability to provide sufficient input and output terminals for maintenance users.

c. data entry and retrieval access at key locations within the maintenance organizations.

d. on-line (real time) data processing capability .

e. reduction of paperwork and administrative involvement.

f. capability to handle peak workloads with no significant impact on response time to user.

g. report generation capabilities during data retrieval.

h. Acceptance Data Package (ADP) change lockout to user personnel to assure configuration control of document.

3.6 FACILITIES

Processing of reparable items is directly related to the availability, facility condition and compatibility and material support of the host infrastructure. The contractor must ensure maintenance facilities systems and equipment are adequately maintained and/or upgraded to meet mission requirements. In support of this:

a. the contractor shall maintain a listing of all facilities used or required by the maintenance and material functions. This list will identify the maintenance requirement to facility relationship, the operational status of each facility and provide a status of all major repairs and modifications. If new or planned construction is involved in satisfying a requirement, these will also be listed.

b. the individual maintenance and material facilities will be evaluated by the using activities. Evaluators will consider current and projected usage, workload, security, safety, energy and personnel efficiency. Evaluations will be reviewed internal to the contractor and subsequently reviewed by the appropriate NASA office. Results of these evaluations, reviews and decisions will be included in the individual facility plans when appropriate.

3.7 TRANSPORTATION

The availability of suitable general and special purpose vehicles directly affects maintenance processing capability. The contractor will:

a. coordinate vehicle requirements and utilization through the Office of Primary Responsibility (OPR).

b. ensure vehicles assigned to the maintenance complex are functional, safe and reliable.

c. provide for vehicle maintenance beyond the scope of normal operator responsibility.

d. ensure vehicles assigned to the maintenance complex are properly used for their specified purpose.

3.8 QUALITY AND SAFETY

The contractor will establish an effective quality control program in accordance with current NASA and contractor guidelines and directives. The Space Station Program

should coordinate processes and requirements with Payload Quality Assurance (RO-PAY) and Quality Engineering (RM-ENG) Divisions for review prior to and during implementation. The maintenance organization will adhere to the following quality and safety guidelines:

a. Make maximum use of existing KSC quality processes and procedures which includes safety, personnel qualifications and performance, and equipment condition. The Quality Program will contain procedures to identify problem areas and recommend corrective actions.

b. Safety programs should be oriented toward accident prevention, safety trend analysis and the investigation of individual events.

SECTION IV
MAINTENANCE MANAGEMENT

The Maintenance Concept for ISSA reparable Flight Compontents, Ground Support Equipment (GSE) and Test Support Equipment (TSE) is for support at two levels: 1) organizational (on-system/equipment) and 2) depot (off system/equipment).. It includes scheduled and unscheduled maintenance as described later in this section.

4.1 MAINTENANCE INFRASTRUCTURE CONCEPTS

The Payload maintenance organization is composed of a prime mission-oriented contractor, several other mission related contractors, and numerous off-Center industrial complexes classified as Depot Maintenance Contractors (DMC). The division of repair responsibilities among the members of the maintenance community is a balance of cost effectiveness, logistics support capabilities and inter-related operational requirements. Some primary factors in selection of maintenance sources are:

a. resource availability. Resources are classified as facilities, documentation, support equipment, skills and manpower necessary to accomplish pertinent tasks.

b. maintenance procedures. These procedures must address the resources required to promote mission effectiveness as measured against cost and schedule responsiveness.

c. maintenance categories. Maintenance tasks are divided into two categories, 1) on-equipment (on-line) and 2) off-equipment (off-line). These categories may be performed by either an on-Center or off-Center repair facility.

d. classification of maintenance action. Maintenance may be divided into preventive maintenance or corrective maintenance actions. Preventive maintenance enhances system and component reliability through preplanned cleaning, lubrication and calibration tasks. Corrective maintenance is the return of equipment to operational specifications following parts failure or physical damage. Corrective maintenance planning must provide for the appropriate resources identified in paragraph (a) above.

e. mission needs. When dictated by mission needs, Payload Operations may authorize the repair of a ORU/LRU/SRU at local or alternate repair facilities when the following criteria are met:

(1) An infrastructure capable of providing the repair resources, quality requirements and recertification criteria is available.

(2) The unique skills, technical data, repair parts and test equipment is available.

(3) Schedule flexibility to accomplish task is feasible.

(4) Approved funding for use of resources, acquisition of repair parts and repair of discrepant item is acquired.

f. Site selection for the repair of individual equipments or systems involves evaluating the availability of specialized skills, required maintenance test equipment, required documentation and facilities. When these requirements are available or can be provided at more than one location, a cost-trade-off analysis will be conducted to determine the most economical location or division of work load. Repair activities at KSC are divided into the following categories.

(1) On-equipment (on-line), on-Center: Those tasks of servicing, processing and de-integrating; including repairing of payload related systems by removing and replacing LRU/SRUs, includes scheduled inspections and modifications to equipment which can be accomplished on a limited scale. This maintenance approach can be classified as "Organizational Level Maintenance".

(2) Off-equipment (off-line): Those tasks requiring a higher level of specialized skill, unique or specialized support equipment or a degree of disassembly not practical within the operational environment. This category includes the removal and replacement of subassemblies as well as fault isolation and replacement of component parts. This maintenance approach can be classified as "Depot Level Maintenance" and may be accomplished at an on-Center or off-Center repair sources.

g. Maintenance Test Equipment (MTE) is described as test equipment unique to a system or LRU/SRU. This equipment must be approved for use in the unique application and maintained to system/equipment specifications. The Maintenance Center MTE allocation/authorizations should be based on peak projected usage and priority of use on mission criticality.

4.2 MAINTENANCE ORGANIZATION

Maintenance functions will be organized to permit maximum utilization of maintenance resources by emphasizing direct labor, training, supervision, and de-emphasizing overhead staff functions.

a. All maintenance functions will be assigned to meet mission requirements.

b. Functions required to support the Payload mission will be authorized.

c. Maintenance planning is based on the requirement to achieve optimum use of maintenance resources and must not jeopardize operational tasking. Discrepancies, both operational and maintenance that cannot be resolved, will be referred through maintenance management channels for resolution.

4.3 MAINTENANCE OPERATIONS INTERFACE

Maintenance management will ensure the availability of an information system that provides continuous review of operational support requirements (mission requirements). Updates to the information system operational support requirements lists would be provided by user organizations (Operations). Through this interface, maintenance facilities, GSE, personnel, and training can be adjusted to meet those support requirements. In addition,

a. down time for systems and equipment preventive maintenance and calibration can be scheduled.

b. manpower and ODC budget projections can be made.

c. routine purging and upgrading of support capability can be planned and executed with out impact to mission requirements.

4.4 LEVELS OF MAINTENANCE

4.4.1 Organizational Level Maintenance. Organizational level maintenance provides for the removal and replacement of Line Replaceable Units (LRU), either on a scheduled (periodic) or unscheduled (component failure) basis. This may include repair in-place maintenance. A repair in-place determination will be made by the responsible manager when justified by the results of the logistics engineering analysis or based on actual experience with its impact on operational turnaround. Scheduled maintenance

actions include such activities as inspections, cleaning, lubrication, servicing, calibration and adjustment of operational systems or related subsystems. Unscheduled maintenance actions include troubleshooting, fault isolation, removal and replacement of failed LRU' s, and subsequent verification of the system or its related subsystems. This level of maintenance performed on GSE, Flight, FS & E or TSE, when required, and when permitted by the operations schedule, is performed at the installed location or designated work areas.

4.4.2 Depot Level Maintenance. Depot level maintenance consists of maintenance tasks that are beyond the cost effectiveness and capabilities (including facilities, equipment, manpower, and technical skills) of the organizational level. It consists of fault isolation, repair, modifications and reverification of the LRU's removed during organizational level maintenance activities, as well as the repair or maintenance actions on Shop Replaceable Units (SRU). It is performed in Government or commercial shop facilities located either on-Center or off-Center. Depot level maintenance also includes emergency manufacture of unavailable parts and provides for technical assistance to other maintenance levels on an as-required basis.

4.5 MAINTENANCE DOCUMENTATION

Maintenance documentation provides two primary functions in support of equipment life-cycle. First, it ensures data that both the user and repair engineer have access to design specification of operational parameters. These specifications and parameters ensure the user consistent results and the repair engineer repair/retest criteria. Second, specialized documentation provides logistics support information as well as failure data. Some typical examples of customized documentation are listed below:

a. Operation and Maintenance Manuals (O & M). These are normally provided by the original equipment manufacturer (OEM) or vendor.

b. Operation and Maintenance Instruction Manual (OMI). These are normally provided by NASA or the operations contractor.

c. Depot Maintenance Manual (IDMM). These are normally provided by the operations contractor or subcontractor.

4.5.1 KSC Standard Documentation. Several standard KSC forms are used to report problems and initiate repair action requiring the initiator to fill in the appropriate blocks, obtain the proper approval/signatures, and make the necessary distribution. Examples are listed below:

a. Interim Problem Report (IPR)

b. Problem Report (PR)

c. Work Order (WO)

d. Test Preparation Sheet (TPS)

4.5.2 Depot Documentation. To support depot level repair, a lower tier of maintenance support is necessary to ensure operational needs. Support at this level includes, but is not limited to, the following:

a. Establishment of spare and repair parts inventories at ORU, LRU, SRU, and piece part level.

b. Identification and development/procurement of required documentation.

c. Participation in provisioning conferences to ensure accurate repair parts inventory is provided when support requirements are developed by off-center organizations.

d. Preparation of input for the development of off-line maintenance utilization studies in support of requirements developed by off-center organizations.

e. Review maintenance planning and program documents to determine the impact on logistics support.

f. Support design reviews to verify the adequacy of the proposed maintenance support.

g. Accomplishment of provisioning for assigned systems through review of Source Maintenance and Recoverability (SM & R) coding (See Table 4-1) and determination of repair levels and cycle times.

SOURCE		MAINTENANCE		RECOVERABILITY	SPECIAL HANDLING
		USE	REPAIR		
1ST POSITION	2ND POSITION	3RD POSITION	4TH POSITION	5TH POSITION	6TH POSITION
P PROCURABLE	A STOCKED B INSURANCE E GSE G LIFE CYCLE BUY	C REPLACE AT ORGANIZATIONAL LEVEL ON-ORBIT	B NO REPAIR. RECONDITION OR CALIBRATE, PRELOAD, ETC.	Z NON REPARABLE CONDEMN AT ANY AUTHORIZED LEVEL	NOT APPLICABLE
K COMPONENT OF A REPAIR KIT (NON STOCKED)	F MAINT KIT ORGANIZATION/ INTERMIDIATE D DEPOT KIT B IN BOTH KITS	O REPLACE AT ORGANIZATIONAL LEVEL ON-GROUND	O REPAIR AT ORGANIZATIONAL LEVEL ON-GROUND	O REPARABLE CONDEMN AT ORGANIZATIONAL LEVEL ON-GROUND	
M MANUFACTURED (NON STOCKED)	O ORGANIZATIONAL F INTERMEDIATE D DEPOT	H REPLACE AT INTERMEDIATE LEVEL ON-ORBIT	H REPAIR INTERMEDIATE LEVEL ON-ORBIT	L REPARABLE CONDEMN AT OEM LEVEL	
A ASSEMBLE (NON STOCKED)	O ORGANIZATIONAL H INTERMEDIATE D DEPOT	D REPLACE AT DEPOT LEVEL	D DEPOT LEVEL LIMITED REPAIR AT INTERMEDIATE LEVEL	D REPARABLE CONDEMN AT DEPOT LEVEL	
X NON STOCKED	A SEE NEXT HIGHER ASSEMBLY B RECLAMATION REQUISITION FROM ITEM MANAGER C DRAWINGS OBSOLETE, ETC.		L OEM REPAIR LIMITED REPAIR ON-ORBIT INTERMEDIATE/ DEPOT LEVEL Z NO REPAIR	A SPECIAL HANDLING	

Table 4-1. SOURCE, MAINTENANCE AND RECOVERABILITY CODE TABLE

4.6 CONTRACT MAINTENANCE

Contract maintenance is an alternative method used to support payload operational requirements ranging from minor repairs to operations and maintenance of complete systems on a sustained basis. When this method of support is selected, maintenance management responsibilities include defining the scope of the required tasks in a Statement of Work (SOW), placing the contract and monitoring contract performance.

4.7 SOURCE, MAINTENANCE AND RECOVERABILITY (SM & R) CODES

4.7.1 General. SM & R Codes establish the logistics criteria for use of the uniform SM & R coding matrix which has application to more than one of the functional payload operational logistics plans. It is based on the joint military services uniform SM & R coding as defined in T.O. 00-25-195. Specifically, guidelines for assignment of SM & R codes for Space Station equipment and/or piece parts is directed by ISSA Program Document "D684-100041-1-1", the "Logistics Analysis Plan". By this approach, conformity of interpretation and application of codes can be assured at interfacing points in the support process. Those SM & R codes in this plan are for the use of all Space Station logistics functions. The meaning and use of each code within the respective column (position) is described in the following paragraphs (See Table 4-1).

4.7.2 SM & R Coding Matrix Guidelines. The SM & R code is a uniform code assigned to all support items early in the acquisition cycle to convey maintenance and supply instructions to the various logistic support levels and operational organizations.

a. Uniform Sources Codes (1st and 2nd Position). Source Codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. The first position of the SM & R coding format indicates the source for acquiring the item; i.e. procurable, manufactured, assembled, etc. The second position provides additional information such as organization, intermediate, or depot level for manufacture parts. Source codes entered in the first and second positions of the Uniform SM & R Code will be formatted as indicated by the following code definitions:

- PA - Item procured and stocked for anticipated or known usage.
- PB - Item procured and stocked for insurance purposes because essentiality dictates that a minimum quantity be available in the supply system.

- PE - Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activity.
- PG - Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time.
- KF - An item of a maintenance kit and not purchased separately. Maintenance Kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
- KD - An item of depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.
- KB - Item included in both a depot overhaul/repair kit and a maintenance kit.
- MO - Item to be manufactured or fabricated at the organizational level.
- MF - Item to be manufactured or fabricated at the intermediate maintenance level.
- MD - Item to be manufactured or fabricated at the depot maintenance level.
- AO - Item to be assembled at the organizational maintenance level.
- AH - Item to be assembled at the intermediate maintenance level.
- AD - Item to be assembled at the depot maintenance level.
- XA - Item not procured or stocked because the requirement for the item will result in the replacement of the next higher assembly.
- XB - Item is not procured or stocked. If not available through salvage, requisition from item manager.
- XC - Installation drawing, diagram, instruction sheet, field service drawing, that is defined by manufacturers' part number.

b. Maintenance Codes (3rd and 4th Position). Maintenance Codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SM & R Code.

The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The decision to code the item for removal and replacement at the indicated maintenance level will require that all the capabilities necessary to install and ensure proper operation after installation of a replacement item, (i.e., pre-installation inspection, testing, and post-installation checkout) are provided.

The maintenance code entered in the fourth position indicates whether the item is to be repaired at the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). The decision to code the support item for repair at the indicated maintenance levels requires that all maintenance capability (remove, replace, repair, assemble, and test) for the support items be provided to that level. This does not preclude some repair which may be accomplished at a higher level of maintenance. When a maintenance code is not used a dash (-) will be entered. Maintenance codes entered in the third and forth positions of the Uniform SM & R Code will be formatted as indicated by the following code definitions:

(1) Use Codes

- C - Support item is removed, replaced, used at the organizational on-orbit level of maintenance.
- O - Support item is removed, replaced, used at organizational ground level of maintenance.
- H - Support item is removed, replaced, used at on-orbit intermediate level.
- D - Support item is removed, replaced, used at depot only.

(2) Repair Codes

- B - No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.
- O - The lowest maintenance level capable of complete repair of the support item is the ground organizational level.
- H - The lowest maintenance level capable of complete repair of the support item is the intermediate level on-orbit.

- D - The lowest maintenance level capable of complete repair/overhaul of the support item is the depot level. However, limited repair may be accomplished at the on-orbit intermediate level.
- L - Repair at OEM (CLS items). Limited repair may be accomplished at the On-Orbit Intermediate or Depot Level.
- Z - Non-repairable. No repair is authorized.

c. Recoverability Codes (5th Position). Recoverability Codes are assigned to support items to indicate the disposition action on unserviceable items. Recoverability codes entered in the fifth positions of the Uniform SM & R Code will be formatted as indicated by the following code definitions:

- Z - Non-repairable item. When unserviceable, condemn and dispose at the level indicated in column 3.
- O - Repairable item. When uneconomically repairable, condemn and dispose at the organizational level (on-ground).
- D - Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
- L - Repairable item. When beyond lower level repair capability, return to the OEM for final disposition. Condemnation and disposal not authorized below the OEM.
- A - Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

NOTE

Recoverability codes for No Repair, Clean Repair Soft Goods Only" will begin with a B" rather than a C".

d. Special Handling (Not Applicable) (6th Position).

4.7.3 Changes to the Coding Table. Additions, deletions, or changes to this table or accompanying narrative must be initiated by a change to the Program level "Logistics Analysis Plan", D684-100041-1-1.

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APPENDIX A

INTERNATIONAL SPACE STATION ALPHA MANAGEMENT RESPONSIBILITIES MATRIXES

A-1.0 CONTENTS

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APPENDIX B

INTERNATIONAL SPACE STATION ALPHA LOGISTICS OPERATIONS MANAGEMENT CENTER REPARABLES AND NON-REPARABLES

B-1.0 COMPOSITION

The following list of equipment is assembled to establish a base line number of reparable and non-reparable ORUs, LRUs and SRUs that will be processed through KSC for the Space Station Alpha Program. It is derived from the Support Equipment IPT list maintained on the SAINTANNE Server at KSC (Launch Site GSE Management System (LSGMS) when available). This MSB is not intended to be a fixed list or number. It is a fluid document to be used to identify the depth and scope of future support requirements. The baseline is made up of Flight Systems, Program GSE and contingent Test Support Equipment (TSE), KSC designed FS & E and GSE, International Partners GSE and TSE, and Prime Responsibility GSE and TSE.

B-2.0 GROUNDRULES FOR SELECTION OF LISTED EQUIPMENT

1) Unique reparable and non-reparables estimates are developed from Spares Provisioning Analysis (SPAs), Drawings, Implementation Plans and Engineering Estimates. The source for each item is designated in the reference block of the MSB.

3) If SPA, Drawings, Implementation Plans or an Engineering Estimate for an item is not available, the reparable and non-reparables estimates are derived using averages from both the KSC approved Electrical and Mechanical GSE actuals. The use of this methodology can be identified by the term "Average" in the reference block on following lists.

4) All LSGMS "Withdrawn" GSE have been archived from the MSB.

5) International Partner GSE/TSE and GSE/TSE for which the Prime retains responsibility for requirement definition and/or approval is included as information becomes available. This is not an inclusive list of this category of items at this time, nor are the TSE items included in the baseline total.

B-3.0 DESCRIPTION

This MSB is organized by United States(U.S.) provided GSE, TSE and FS & E and International Partners GSE and TSE. , The U.S. section is made up of the Prime Contractor (Boeing), the three tier 1 subcontractors (MDA-HB, PG-1; ROCKETDYNE, PG-2; and BOEING, PG-3) and Kennedy Space Center (KSC). The second section consists of the International Space Station Freedom (ISSA) International Partners, the Canadian Space Agency (CSA), European Space Agency (ESA), National Space Development Agency of Japan (NASDA) and Russian Space Agency (RSA).

B-3.1 TERMS DEFINITION

B-3.1.1 Flight: Space Station Flight Systems are the flight reparables and non-reparables that are processed by KSC for launch aboard the Space Shuttle. These include, but are not limited to, Space Station elements, Orbital Replaceable Units (ORUs), Flight Crew Equipment and Payload Racks. The Logistics Operations Management Center (LOMC) will have maintenance support responsibility for these items post Logistics Management Responsibility Transfer (LMRT).

B-3.1.2 Program Ground Support Equipment (GSE): This category includes those GSE items identified in the Support Equipment IPT data base on the KSC SAINTANNE server but designed/developed at a location other than KSC. These items will be utilized in the processing of Space Station Flight Systems at KSC. They are divided into three subgroups which include GSE, TSE and Flight. The GSE list is further divided into approved and unapproved items. Approved items have Space Station Control Board (SSCB) approval. Unapproved items are required items that do not have SSCB approval. Test Support Equipment (TSE) are those equipments identified to support potential requirements. It is projected for use in the operation and/or repair of GSE items required at KSC and will accompany those GSE items to KSC. TSE items (approved and unapproved) are considered potential candidates for transfer to KSC for maintenance support.

B-3.1.2 KSC Designed FS & E/GSE/TCMS: This category includes the KSC Facility Systems and Equipment (FS&E) and GSE that KSC has responsibility for designing/acquiring and the Harris designed Test, Control and Monitoring System. The KSC FS&E items are broken down into KSC Logistics Facilities FS&E and Space Station Processing Facility (SSPF) FS&E that is subdivided into electrical and mechanical categories. The KSC GSE is divided into approved and unapproved with subdivisions of electrical and mechanical LRUs. The KSC Test Control and Monitor System (TCMS) provides a LRU list segregated by TCMS set.

B-3.1.3 PROGRAM RESPONSIBILITY. The Program Responsibility category consists of those items that have no firm resolution to acquire and/or no provider identified to date; and, those items that are being acquired through other U. S. NASA Centers or International participants. They are listed in Study 1, 2, 4, 5 category or as Other.

- Study 1 - Required at KSC but item not on baseline list.
- Study 2 - Requirement at KSC pending further study.
- Study 4 - Not required at KSC but item on baseline list.
- Study 5 - Required at KSC for Shuttle integration but provider unidentified.
- Other - Other U. S. NASA Centers or International participants provided items.

B-3.1.4 AVERAGE CALCULATION. In estimating the number of reparables and non-reparables per LRU/SRU/ORU, the KSC approved Electrical and Mechanical GSE were used as a model. The average was derived in the Electrical and Mechanical categories using the list dated 7/30/1994. The system/GSE items with the highest and lowest total reparables and non-reparables were deleted prior to the calculation to exclude high/low variances.

The estimate used in the Fluid/Servicers category is a true average due to the small sample.

B-4.0 LOMC LOGISTICS RESPONSIBILITIES

B-4.1 KSC GSE. The LOMC IPT will develop and maintain logistics support capability for all KSC designed GSE. This will include the required documentation, spares, repair capability and 2nd teir support equipment.

B-4.2 PRIME PROVIDED GSE (PG-1, PG-2 &PG-3). Prime is responsible for providing reprocurement standard drawing packages, LSA to the depot level, maintenance analysis data, technical and operations manuals (vendor manuals for Custom-Off-The-Shelf items) and provisioning analysis data. The LOMC IPT will develop and maintain logistics support capability and procure all spare and repair parts. 2nd teir support equipment will be built/procured by the LOMC IPT if not developed or procured under the prime contract.

INTERNATIONAL SPACE STATION ALPHA PROGRAM
REPARABLES AND NON-REPARABLES

LOMC
MAINTENANCE SUPPORT BASELINE
SUMMARY

REF: SB LIST UPDATED 11/23/1994

SYSTEMS	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE
TOTAL	**1652**	**5835**	**7487**
UNITED STATES PROVIDED FLIGHT AND GROUND EQUIPMENT	1652	5835	7487
KSC FACILITY SYSTEMS AND EQUIPMENT	364	2107	2471
KSC GROUND SUPPORT EQUIPMENT	626	2301	2927
TEST, CONTROL & MONITORING SYSTEM (TCMS)	321	0	321
PG-1 (MDA-HB) FLIGHT AND GROUND EQUIPMENT	152	634	786
PG-2 (ROCKETDYNE) FLIGHT AND GROUND EQUIPMENT	36	202	238
PG-3 (BOEING) FLIGHT AND GROUND EQUIPMENT	57	251	308
PROGRAM RESPONSIBILITY	96	340	436
INTERNATIONAL PARTNERS FLIGHT AND GROUND EQUIPMENT	UNKNOWN	UNKNOWN	UNKNOWN
CANADIAN SPACE AGENCY (CSA)	UNKNOWN	UNKNOWN	UNKNOWN
EUROPEAN SPACE AGENCY (ESA)	UNKNOWN	UNKNOWN	UNKNOWN
NATIONAL SPACE DEVELOPMENT AGENCY OF JAPAN (NASDA)	UNKNOWN	UNKNOWN	UNKNOWN
RUSSIAN SPACE AGENCY (RSA)	UNKNOWN	UNKNOWN	UNKNOWN

INTERNATIONAL SPACE STATION ALPHA

UNITED STATES

PROVIDED

FLIGHT AND GROUND EQUIPMENT

KSC FACILITY SYSTEMS AND EQUIPMENT

UPDATED 7/20/1994

SYSTEMS		JUN 94 BASELINE UNIQUE REPARABLE	UNIQUE NON REPARABLE	TOTAL UNIQUE	REFERENCE
TOTAL FSE		**364**	**2107**	**2471**	
LOGISTICS FACILITIES		6	153	159	
M6-794 HVAC		1	46	47	SPA01FS299
M6-794 AUTO GUIDE VEHICLE (HI DENSITY STORE SYS)		0	10	10	ENG. EST
M7-505 HVAC		5	92	97	SPA01SS118
M7-505 VERTICAL HIGH DENSITY STORAGE SYSTEM		0	3	3	ENG. EST
M7-505 MOBILE RAIL RACK (HIGH DENSITY)		0	2	2	ENG. EST
SSPF		358	1954	2312	
ELECTRICAL		166	707	873	
CLOSED CIRCUIT TELEVISION (CCTV)	K61-2481	1	25	26	SPA01FS042
LONG RUN CABLE SYSTEM	K61-2611	6	36	42	AVERAGE
PEDESTAL/ELECTRICAL SYSTEM I/F	K61-2621	0	34	34	ENG EST
CABLE SUBASSEMBLIES, MISCELLANIOUS	K61-2742	6	36	42	AVERAGE
UNINTERRUPTABLE POWER SUPPLY (UPS)	K61-2773	42	22	64	MDC Y3002
INTEG ENVIR MONITORING SYSTEM (IEMS)	K61-2782	16	115	131	MDC Y3007
CAUTION AND AREA WARNING SYS	K61-2874	9	3	12	MDC Y3003
ILTI USER CABLE SYSTEM-CABLE INTEG	K61-2877	10	26	36	SPA01V2101
MPLEX CONTROL SYS (SENSR & 60HZ CABLE-EDL)	K61-2954	8	25	33	SPA03CY00
60 HZ LOW VOLT POWER	K61-3098	12	123	135	SPA 01LI01-CAO
ADMIN DATA COMM LAN NETWORK	K61-3281	16	4	20	ENG. EST
CABLE ASSEMBLIES, MISCELLANIOUS	K61-3383	6	36	42	AVERAGE
60HZ HIGH VOLT 4160V SECONDARY	K61-3416	5	25	30	KSCM-DL-0013
ELEVATOR, FREIGHT	K61-3479	3	28	31	RSPL
ELEVATOR, PASSENGER	K61-3480	2	25	27	RSPL
POWERED DOORS - VERTICAL LIFT / HI BAY-AIR LOCK	K61-3503	6	36	42	AVERAGE
POWERED DOORS - VERTICAL ROLLUP/COIL	K61-3505	6	36	42	AVERAGE
POWERED DOORS - HORIZONAL ROLL/SLIDING	K61-3506	6	36	42	AVERAGE
HI DATA RATE FIBER OPTICS - COM & TRK	TBD	6	36	42	AVERAGE
MECHANICAL		192	1247	1439	
CRANES, HOIST OFF-LINE LABS	B/L580.21	8	9	17	79K23096
CRANES 30 T HI BAY	K61-2944	22	186	208	SPA01FS027
CRANES 5 T BRIDGE	K61-2946	3	61	64	SPA01FS013A
CRANES 15 T BRIDGE	K61-2947	37	200	237	SPA 01FS042
CRANES 5 T MONORAIL	K61-2948	3	61	64	SPA 01FS013A
GN2 FAC DISTRIBUTION SYSTEM	K61-2989	33	264	297	SPA01SS09
GHe FAC DISTRIBUTION SYSTEM	K61-2990	17	90	107	SPA01SS09
CHILLED WATER PIPING / MANIFOLD	K61-3160	1	0	1	ENG. EST
CHILLED POTABLE WATER DRAIN PANEL	K61-3300	3	11	14	AVERAGE
HVAC HIGH TEMP. WATER (INSIDE SSPF)	K61-3423	3	11	14	AVERAGE
COMPRESSED AIR SYS	K61-3481	15	5	20	MDC Y3005
VACUUM SYSTEM	K61-3482	9	17	26	MDC Y3004
AIR SHOWERS	K61-3509	3	11	14	AVERAGE
FLOOR PLATES / SERVICE ACCESS	TBD	3	11	14	AVERAGE
FOOD WRAP - FLIGHT PREPARATION	TBD	3	11	14	AVERAGE
FREEZERS - FLIGHT PREPARATION	TBD	3	11	14	AVERAGE
HEAT EXCHANGER (HVAC)	TBD	4	7	11	SPA01LI021
HVAC AIR HANDLERS / CONTROLS	TBD	19	270	289	ENG. EST
PANEL ASSEMBLY, FACILITY VENTS (PNEU)	TBD	3	11	14	AVERAGE

KSC FACILITY SYSTEMS AND EQUIPMENT

UPDATED 7/20/1994

SYSTEMS		JUN 94 BASELINE UNIQUE REPARABLE	JUN 94 BASELINE UNIQUE NON REPARABLE	JUN 94 BASELINE TOTAL UNIQUE	REFERENCE
		(NOT INCLUDED IN BASELINE TOTAL)			
NON-PGOC MAINTAINED SYSTEMS		**181**	**389**	**570**	
ELECTRICAL		**105**	**192**	**297**	
PAGING & AREA WARNING (SPC)	K61-2485	11	1	12	SPA09CU05
OUTSIDE CABLE PLANT (BOC)	K61-2685	4	14	18	KSCM-DF-0037
ELECTRONIC SECURITY SYSTEM	K61-2881	15	17	32	82K00721
FIRE ALARM & DETECTION (BOC)	K61-3417	22	68	90	SPA09CU11
TIMING & COUNTDOWN (SPC)	K61-3610	37	32	69	SPA02EE031
ADMIN TELEPHONES (BOC)	N/A	10	15	25	KSCM-DL-0004
OIS-D NETWORK & TECH (SPC)	N/A	0	9	9	SPA01EE023
PARKING LOT & STREET LIGHTS	N/A	6	36	42	AVERAGE
MECHANICAL		**76**	**197**	**273**	
WIDEBAND FIBER OPTICS (SPC)	K61-2601	3	0	3	SPA09CU03
GROUNDING,BONDING & LIGHTNING PROTECTION	K61-2620	6	10	16	KSCM-DF-0047
FIRE SUPPRESSION SYSTEM	K61-3419	8	22	30	AVERAGE
POTABLE WATER (BOC)	K61-3422	28	39	67	ENG. EST
SANITATION - SEWAGE (BOC)	K61-3424	2	22	24	ENG. EST
BUILDING STRUCTURE/ROOF (SSPF) (BOC)	N/A	8	35	43	ENG. EST
CHILLER PLANT (BOC)	N/A	14	52	66	ENG. EST
DOCK LEVELERS (BOC)	N/A	4	9	13	ENG. EST
HIGH TEMP H2O (BOC)	N/A	3	8	11	ENG. EST

KSC GROUND SUPPORT EQUIPMENT

REF: SE LIST UPDATD 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
KSC DESIGNED GSE TOTAL		**626**	**2301**	**2927**	
KSC DESIGNED APPROVED GSE					
TOTAL		**560**	**1975**	**2535**	
ELECTRICAL EQUIPMENT		**260**	**918**	**1178**	
PACKET DATA ANALYZER	GD5P00069	6	36	42	AVERAGE
60 Hz POWER GSE	GE5-00146	0	20	20	SPA01SS113-001
GROUND STRAP SET - SSPF	GB5P00183	3	11	14	AVERAGE
MDM INTERFACE SIMULATOR	GF5P00233	18	29	47	02EE01-001
HIGH DENSITY GROUND RECORDER	GD5-00377	38	172	210	SPA01SS02-004
UNIVERSAL CHECKOUT CONSOLE (UCC)	GD5-00414	0	30	30	SPA29SP01-001
DATA BUS TESTER - CMU	GF5P00436	6	36	42	AVERAGE
CARGO INTEGRATION TEST SET(CITE)	GF5-00508	1	5	6	ENG EST
US INT. STD PAYLOAD RACK (ISPR) CK OUT UNIT	GF5-00510	32	11	43	ENG EST
FDDI NETWORK P/L DATA DEMUX 7 DIS	GD5P00512	6	36	42	AVERAGE
YLOAD HIGH RATE INPUT SIMULATOR	GF5P00627	25	8	33	09EO69-001
F GSE GROUND POWER	GE5-00650	13	21	34	82KD4587
TICAL SIGNAL GENERATOR	GO5P00660	6	36	42	AVERAGE
KSC GSE B O BOXES, ADAPT CABLES AND STE	CB5-00665	6	36	42	AVERAGE
PORTABLE AMMONIA REMOTE SENSING CART	GI5-00692	37	37	74	ENG EST
GENERAL POWER DISTRIBUTION ASSEMBLY	GE5-00699	2	8	10	KSCN-DF-0114
120 Volts DC FLT. PWR. SUPPLY	GE5-00700	6	62	68	ENG EST
PORTABLE AMMONIA SENSOR	GI5P00766	1	0	1	82K03918
SPIDER CABLES	GB5P00797	6	36	42	AVERAGE
RAW DATA RECORDER (RADAR)	GD5P00800	6	36	42	AVERAGE
ANTENNA REPEATER SYSTEM (MODIFIED)	GC5P00801	6	36	42	AVERAGE
GPS DATA INTERFACE SIMULATOR	GD5P00802	6	36	42	AVERAGE
IMPLM CMU	GD5P00803	6	36	42	AVERAGE
STATION DOCKING SYSTEM CMU	GD5P00806	6	36	42	AVERAGE
USICU POWER DISTRIBUTION ASSEMBLY	GE5P00826	6	36	42	AVERAGE
USICU VACUUM PUMPING SYSTEM	GS5P00860	6	36	42	AVERAGE
GROUND AIR CONDITIONING UNITS (GACU)	GR5P00866	6	36	42	AVERAGE
MECHANICAL EQUIPMENT		**152**	**573**	**725**	
WORKSTAND AIR BEARING PALLET	GX5-00023	21	62	83	MDC Y3006
GSE AIR BEARING CASTER (HEAVY DUTY)	GX5-00025	0	0	0	Ref: GX5-00023
ELECTRIC FORK TRUCK	GX5-00050	8	79	87	21FKS1-001
GHe DISTRIBUTION (FLT/GSE)	GS5-00114	12	6	18	82K04174
ELECTRIC TOW VEHICLE	GX5-00129	4	29	33	21WSS1-001
RACK INSERTION DEVICE	GH5P00191	3	11	14	AVERAGE
GSE AIR BEARING CASTER (LIGHT DUTY)	GX5-00220	0	0	0	Ref: GX5-00023
PAYLOAD STRONGBACK SYSTEM	GH5-00269	0	10	10	01SR01-002
RETRACTABLE OVERHEAD ACCESS PLATFORM	GA5-00330	11	34	45	SPA01FS093
CARGO ELEMENT WORK STANDS (10 FOOT)	GH5-00333	5	22	27	ENG EST
LAUNCH PACKAGE INTEGRATION STAND (LPIS)	GH5-00349	3	19	22	SPA09FY02
CARGO ELEMENT WORK STANDS (15 FOOT)	GH5-00410	4	20	24	ENG EST
HYDRAULIC POWERED LIFT PLATFORM	GA5-00431	4	29	33	SPA 21W551
RGO ELEMENT LIFTING ASSEMBLY	GH5-00547	7	21	28	SPA 21WSS1
'LOAD FITTINGS	GH5-00621	7	12	19	SPA01FS083
YLOAD WEIGHT AND BALANCE FITTING SET	GH5-00622	1	8	9	KSCM-DM-0096
WORKSTAND ACCESS STAIRS	GA5-00625	0	4	4	82K03984

KSC GROUND SUPPORT EQUIPMENT

REF: SE LIST UPDATD 11/23/1994		JAN 95 BASELINE			
SYSTEMS	PMN	UNIQUE REPARABLE	UNIQUE NON REPARABLE	TOTAL UNIQUE	REFERENCE
SCAFFOLDING	GA5P00626	3	11	14	AVERAGE
AFT FLIGHT DECK STAND	GH5-00683	1	5	6	ENG EST
T-0 STAND (GHE-00684)	GHE-00684	1	4	5	ENG EST
APCU-I PAYLOAD INTEGRATION H/W	GR5P00698	3	11	14	AVERAGE
CABLE TRAY STAND	GH5-00712	0	7	7	ENG EST
CARGO ELEMENT EXTENSION KIT	CH5-00717	3	11	14	AVERAGE
AMMONIA TANK ASSY VALVE SAVER SUPPORT	GS5P00729	3	11	14	AVERAGE
REMOVABLE END ACCESS PLATFORM	GA5P00754	20	43	63	01FS093-045
ALIGNMENT EQUIPMENT	GK5-00756	1	3	4	SPA09FS093
GENERAL PURPOSE SLING KIT	GH5-00764	0	2	2	SPA09FT06
ROEU SUPPORT ARM	GR5P00809	3	11	14	AVERAGE
DFRF ORBITER ACCESS GSE FOR PLM / MPLM	GA5P00810	3	11	14	AVERAGE
EARLY / LATE ENTRY GSE	GH5P00810	3	11	14	AVERAGE
PAD / PCR ACCESS GSE FOR PLM / MPLM	GA5P00811	3	11	14	AVERAGE
RACK ACCESS STANDS	GA5P00812	3	11	14	AVERAGE
ATTACH PAYLOAD SUPPORT STAND	GH5P00835	3	11	14	AVERAGE
ROFU SUPPORT ARM	GH5P00844	3	11	14	AVERAGE
IMPLM CONDITIONED CARGO TRANSPORT EQUIP	GR5P00855	3	11	14	AVERAGE
RACK INSERT DEVICE END EFFECTORS (90° HATCH)	TBD	3	11	14	AVERAGE
FLUIDS/SERVICERS		148	484	632	
SSPF AMMONIA SERVICING SYSTEM	GS5-00421	74	276	350	ENG EST
PAD FIXED ITCS FLUID HX SUPPORT	GR5P00857	37	104	141	AVERAGE
IMPLM MOBILE COOLING SERVICER	GS5P00859	37	104	141	AVERAGE

KSC DESIGNED UNAPPROVED GSE

TOTAL		66	326	392	
ELECTRICAL EQUIPMENT		36	216	252	
INTERFACE BREAKOUT BOXES - FLIGHT	CB5P00174	6	36	42	AVERAGE
SRMS SHUTTLE END EFFECTOR INTERFACE SIM	GF5P00197	6	36	42	AVERAGE
DDCU	TBD	6	36	42	AVERAGE
FLUID SERVICE QUICK DISCONNECTS	TBD	6	36	42	AVERAGE
APCU-I	TBD	6	36	42	AVERAGE
FLIGHT ELECTRICAL CONNECTORS (USICU)	TBD	6	36	42	AVERAGE
MECHANICAL EQUIPMENT		30	110	140	
SSRMS LATCHING END EFFECTOR SIMULATOR	GF5P00561	3	11	14	AVERAGE
ORBITER DOCKING SYS SIM CONTROL UNIT	GD5P00805	3	11	14	AVERAGE
ORBITER INTERFACE UNIT INTEGRATION HDWR	GR5P00808	3	11	14	AVERAGE
ORBITER DOCKING SYSTEM SIMULATOR	GF5P00829	3	11	14	AVERAGE
BERTHING MECHANISM INSTALLATION KIT	TH1-01224	3	11	14	AVERAGE
CUPOLA/CBM/LIFTING BEAM	TH1-01267	3	11	14	AVERAGE
AISLE STORAGE CONTAINER LOADER	GH1-01316	3	11	14	AVERAGE
SUPPORT EQUIPMENT TOW BAR	ST2P20151	3	11	14	AVERAGE
ELEMENT HANDLING SLING	T1063	3	11	14	AVERAGE
FLUID SERVICE QUICK DISCONNECTS	TBD	3	11	14	AVERAGE

KSC
TEST, CONTROL AND MONITORING SYSTEM (TCMS)

Note:

B1 Set Maintenance Planning will be completed 2nd CY Quarter 95. A1, C1 & SN 0 are essentially the same as B1.

		JANUARY 95 BASELINE					
		A1 UNIQUE	B1 LRU	C1 UNIQUE	SN 0 UNIQUE	TOTAL	
SYSTEM LRUs	PMN	REPARABLES					REFERENCE
TOTAL		TBD	321	TBD	TBD	321	
CEC	06-0087-000		1				B1 DIL
FDDI PHY	06-0100-000		1				B1 DIL
FDDI PHY	06-0100-000		1				B1 DIL
FDDI MAC	06-0127-000		1				B1 DIL
FDDI MAC	06-0127-000		1				B1 DIL
FAN ASSY FRONT	3003711-101		4				B1 DIL
POWER SUPPLY	313WA8E-1068		2				B1 DIL
FDDI CNTR. UNIT	7200-004		9				B1 DIL
ENET CNTLR UNIT	7200-009		18				B1 DIL
FLTR DBASE UNIT	7200-019		9				B1 DIL
MAIN PROC. UNIT	7200-025		9				B1 DIL
HIM POWER SUPPLY	83501132-002		1				B1 DIL
PWR DISTR. PANEL	83K00201-101		3				B1 DIL
POWER DISTRIBUTION PANEL	83K00201-102		5				B1 DIL
POWER DISTRIBUTION PANEL	83K00201-103		10				B1 DIL
F/E BRIDGE	83K00208-001		9				B1 DIL
ROUTER	83K00209-008		1				B1 DIL
COMM SERVER	83K00223-001		4				B1 DIL
FRONT PANEL DISPLAY ASSY	83K00224-103		1				B1 DIL
M/P REPEATER	83K00228-001		3				B1 DIL
TRANSITION CARD	83K00235-101		2				B1 DIL
HIM CHASSIS	83K01127-101		1				B1 DIL
PERIPHERAL SUB-RACK	83K01133-101		1				B1 DIL
DISPLAY PANEL	83K01136-101		1				B1 DIL
FAN TRAY	83K01138-101		2				B1 DIL
CCA, 16 DI	83K01146-111		1				B1 DIL
CCA, 16 DI	83K01146-114		1				B1 DIL
CCA, 16 DI	83K01146-115		1				B1 DIL
CCA, 16 DI	83K01146-116		1				B1 DIL
CCA, GTC	83K01148-101		1				B1 DIL
CCA, 8RCC	83K01150-101		4				B1 DIL
CCA, 4AOC	83K01152-102		1				B1 DIL
CCA, 4AOC	83K01152-103		1				B1 DIL
CCA, 4AOC	83K01152-104		1				B1 DIL
CCA, 4AOC	83K01152-105		1				B1 DIL
CCA, 4AOC	83K01152-106		1				B1 DIL
CCA, 4AOC	83K01152-107		1				B1 DIL
CCA, 8AIC	83K01154-101		2				B1 DIL
CCA, 8IC	83K01154-103		1				B1 DIL
CCA, 8AIC	83K01154-109		1				B1 DIL
CCA, 4AIC	83K01154-115		1				B1 DIL
CCA, 8AIC	83K01154-122		2				B1 DIL
CCA, 8AIC	83K01154-124		1				B1 DIL
CCA, 2TTL	83K01156-101		1				B1 DIL
CCA, 2TTL	83K01156-102		1				B1 DIL
CCA, 8SSR	83K01158-101		2				B1 DIL
CCA, GICC	83K01180-101		1				B1 DIL
CCA, HIM OSE	83K01180-103		1				B1 DIL
MANCHESTER TRANSITION CARD	83K01340-111		1				B1 DIL
MANCHESTER I/F CARD	83K01342-111		1				B1 DIL
CONTROL PROCESSOR CARD	83K01372-101		2				B1 DIL

KSC
TEST, CONTROL AND MONITORING SYSTEM (TCMS)

Note:

B1 Set Maintenance Planning will be completed 2nd CY Quarter 95. A1, C1 & SN 0 are essentially the same as B1.

		JANUARY 95 BASELINE					
		A1 UNIQUE	B1 LRU	C1 UNIQUE	SN 0 UNIQUE	TOTAL	
SYSTEM LRUs	PMN	REPARABLES					REFERENCE
FRONT END PROCESSOR CARD	83K01372-102		1				B1 DIL
REAL TIME PROCESSOR CARD	83K01372-103		1				B1 DIL
TIMING PROCESSOR CD	83K01373-101		1				B1 DIL
CCA, TPC	83K01373-102		1				B1 DIL
CHASSIS, ASSY	83K01379-001		2				B1 DIL
180 MB HARD DISK	83K01397-001		2				B1 DIL
CCA, BUS BUFFER MONITOR (BBM)	83K01444-101		2				B1 DIL
CCA, BUFFER ACCESS CARD (BAC)	83K01448-102		31				B1 DIL
CCA, BBA	83K01450-102		3				B1 DIL
CCA, BUFFER CONT PROCESSOR CARD (BCP)	83K01453-101		2				B1 DIL
CCA, BUFFER CONT PROCESSOR CARD (BCI)	83K01454-102		2				B1 DIL
CCA, CONTROL BUS MONITOR (CBM)	83K01456-102		1				B1 DIL
CCA, TERMINATION (TER)	83K01458-102		2				B1 DIL
CCA, CONTROL BUS & ARTITER CARD (CBA)	83K01460-102		2				B1 DIL
CCA, MEMORY CARD (MEM)	83K01462-102		8				B1 DIL
CCA, BRIDGE STAC CARD (BSC)	83K01464-102		3				B1 DIL
CCA, MEMORY MONITOR CARD (MMC)	83K01466-102		4				B1 DIL
CHASSIS, BAC	83K01479-101		5				B1 DIL
CHASSIS, C/M	83K01479-201		1				B1 DIL
BIOP	83K01480-102		7				B1 DIL
MIOP	83K01481-102		1				B1 DIL
POWER SUPPLY	83K01482-102		6				B1 DIL
KEYBOARD	83K01483-001		1				B1 DIL
CONTROL/STATUS PANEL	83K01487-101		1				B1 DIL
CPU BOARD	83K01521-001		5				B1 DIL
1/4" TAPE DRIVE	83K01521-005		5				B1 DIL
VME POWER FAIL	83K01521-006		5				B1 DIL
VME POWER SENSE	83K01521-007		5				B1 DIL
GLOBAL MEM. BD	83K01521-013		5				B1 DIL
4 POS. FRONT PLANE	83K01521-020		1				B1 DIL
TAPE DRIVE	83K01521-027		1				B1 DIL
NIGHTHAWK	83K01521-102		4				B1 DIL
PWR SUPPLY	83K01521-103		1				B1 DIL
VRT 19HA MONITOR	83K01621-002		5				B1 DIL
LK401AA KEYBOARD	83K01621-003		5				B1 DIL
MOUSE VSXXX-GA	83K01621-004		5				B1 DIL
STORAGE EXP BOX SZ 12B-EA	83K01621-005		5				B1 DIL
STORAGE EXP BOX SZ 12XLA	83K01621-006		5				B1 DIL
5000/240 CPU	83K01621-201		5				B1 DIL
PRINTER	83K01632-001		1				B1 DIL
PRINTER	83K01636-001		1				B1 DIL
PROCESSOR CABINET ASSY	83K01726-102		1				B1 DIL
PDR VME CHASSIS ASSY	83K01733-101		1				B1 DIL
TERMINAL	83K01741-001		1				B1 DIL
OPTICAL DISK	83K01744-001		3				B1 DIL
PDR PROCESSOR	83K01770-102		1				B1 DIL
DSAR SCSI	83K01771-101		1				B1 DIL
DSAR SCSI	83K01771-102		1				B1 DIL
DSAR SCSI	83K01771-103		1				B1 DIL
ETHERNET CARD	83K01773-101		1				B1 DIL
HVE REPEATER CD	83K01774-101		1				B1 DIL
HVE REPEATER CD	83K01774-102		1				B1 DIL
MAGNETIC DISK DRIVE	83K01776-101		3				B1 DIL

KSC
TEST, CONTROL AND MONITORING SYSTEM (TCMS)

Note:

B1 Set Maintenance Planning will be completed 2nd CY Quarter 95. A1, C1 & SN 0 are essentially the same as B1.

		JANUARY 95 BASELINE					
		A1 UNIQUE	B1 LRU	C1 UNIQUE	SN 0 UNIQUE	TOTAL	
SYSTEM LRUs	PMN	REPARABLES					REFERENCE
MAGNETIC TAPE DRIVE	83K01777-001		1				B1 DIL
LASER PRINTER	83K01976-001		1				B1 DIL
CCA, VME BUS	83K02116-101		1				B1 DIL
CCA, VME BUS	83K02116-103		1				B1 DIL
FRONT PANEL DISPLAY	83K02170-103		1				B1 DIL
TIMING TRANSITION CARD	83K02305-111		1				B1 DIL
CABINET ASSY	83K02461-101		1				B1 DIL
PRINT SERVER	83K03723-101		2				B1 DIL
SN RACK	83K03960-105		1				B1 DIL
CCA, BUS TEST CARD	83K08175-101		3				B1 DIL
PWR DISTR. PANEL	83K30201-103		1				B1 DIL
KEYBOARD	840366-01		1				B1 DIL
CCA, BBM	84K01444-101		1				B1 DIL
MONITOR	900986-07		1				B1 DIL
PWR SUPPLY	MAX-1004-1205		1				B1 DIL

PG-1 FLIGHT AND GROUND EQUIPMENT

REF: SE LIST UPDATED 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
TOTAL PG-1 FLIGHT & GROUND EQUIPMENT		152	634	786	
PG-1 FLIGHT, FEU, ENG MODEL					
TOTAL		6	36	42	
ELECTRICAL					
APCU-I	TBD	6	36	42	AVERAGE
PG-1 APPROVED GSE					
TOTAL		122	454	576	
ELECTRICAL		30	180	210	
SENSOR AND EFFECTOR SIMULATOR	GF2P20007	6	36	42	AVERAGE
VIDEO TEST SET	GQ2P20121	6	36	42	AVERAGE
SPACE TO GROUND SUBSYSTEM (SGS) TEST SET	GQ2-20138	6	36	42	AVERAGE
APCU-B SIMULATOR	GE5P00711	6	36	42	AVERAGE
ASSEMBLY CONTINGENCY SUBSYSTEM (ACS) TEST SET	GQ2-20137	6	36	42	AVERAGE
MECHANICAL		18	66	84	
UMA GROUND CONNECTOR ASSEMBLY	GB2P20227	3	11	14	AVERAGE
AP / ULC BERTHING PORT I / F SIMULATOR	GF2P20239	3	11	14	AVERAGE
CUPOLA TO NODE MATING FIXTURE SLING	GH5P00838	3	11	14	AVERAGE
GSE TRUNNIONS	GH2P20140	3	11	14	AVERAGE
EXTERNAL TCS VALVE SAVER SET	GZ2P20142	3	11	14	AVERAGE
INTERNAL ECLSS VALVE SAVER SET	GZ2P20146	3	11	14	AVERAGE
FLUID/SERVICERS		74	208	282	
INTERNAL TCS SERVICING UNIT	GS2P20060	37	104	141	AVERAGE
INTERNAL TCS COOLING SERVICER	GS2P20061	37	104	141	AVERAGE
PG-1 UNAPPROVED GSE					
TOTAL		24	144	168	
ELECTRICAL		24	144	168	
P/L MDM FEU	GF5P00351-001	6	36	42	AVERAGE
P/L MSU FEU	GF5P00351-002	6	36	42	AVERAGE
LAPTOP FEU	GF5P00351-003	6	36	42	AVERAGE
C / C FEU	GF5P00351-006	6	36	42	AVERAGE

PG-1 FLIGHT AND GROUND EQUIPMENT

REF: SE LIST UPDATED 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
PG-1 APPROVED TSE		(PG-1 SUPPORT RESPONSIBILITY)			
TOTAL		0	0	0	
ELECTRICAL		0	0	0	
CMG GROUND TEST SET	SS2P20003				
PMA-TO-NODE JUMPER SET	ST2P20060				
FLIGHT CONNECTOR SAVERS	ST2P20064				
TUS INTERFACE SIMULATOR	SF2P20102				
TUS MOTION SIMULATOR	ST2P20118				
NODE 1 CABLE KIT	ST2-20154				
NODE 2 CABLE KIT	ST2-20155				
S1 CABLE KIT	ST2-20158				
S3 CABLE KIT	ST2-20160				
S0 CABLE KIT	ST2-20161				
P1 CABLE KIT	ST2-20162				
P3 CABLE KIT	ST2-20164				
MT CABLE KIT	ST2-20166				
MA CABLE KIT	ST2-20169				
ECHANICAL					
MATE 3	SD2-20152				
S3 / P3 SEGMENT HANDLING FIXTURE	ST2-20015				
S1 / P1 SEGMENT HANDLING FIXTURE	ST2-20020				
S0 SEGMENT HANDLING FIXTURE	ST2-20021				
SUPPORT STAND SLING SET	ST2P20038				
PRESSURIZED MATING ADAPTER SLING	ST2P20040				
PMA HANDLING FIXTURE	ST2P20045				
AVIONICS COOLING FLUID INTERFACE TEST KIT	SQ2P20068				
KU-BAND ANTENNA SUPPORT STAND	ST2-20113				

PG-2 FLIGHT AND GROUND EQUIPMENT

REP: SE LIST UPDATED 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
TOTAL PG-2 FLIGHT & GROUND EQUIPMENT		36	202	238	
PG-2 FLIGHT, FEU, ENG MODEL					
TOTAL		TBD	TBD	TBD	
TBD					
PG-2 APPROVED GSE					
TOTAL		24	130	154	
ELECTRICAL		18	108	126	
DC LOAD (PLDDCU)	GE4-06037	6	36	42	AVERAGE
DC POWER SOURCE (20 / 40 KW)	GE4-06041-1	6	36	42	AVERAGE
CONNECTOR SAVER (WP-04)	GT5P00704	6	36	42	AVERAGE
MECHANICAL		6	22	28	
REMOVABLE TRUNNIONS SET	GH4-0609	3	11	14	AVERAGE
ITCS FILL AND DRAIN ADAPTER	GZ4-06137	3	11	14	AVERAGE
PG-2 UNAPPROVED GSE					
TOTAL		12	72	84	
ELECTRICAL		12	72	84	
REMOTE POWER CONTROL MODULES (RPCM)	GE5P00825	6	36	42	AVERAGE
20 / 40 KW POWER SUPPLY MOD KIT	GE4-06041-3	6	36	42	AVERAGE
PG-2 APPROVED TSE		(PG-2 SUPPORT RESPONSIBILITY)			
TOTAL		0	0	0	
PROTECTIVE COVER SET	TP4-46164				

PG-3 FLIGHT AND GROUND EQUIPMENT

REF: SE LIST UPDATED 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
TOTAL PG-3 FLIGHT & GROUND EQUIPMENT		57	251	308	
PG-3 FLIGHT, FEU, ENG MODEL					
TOTAL		9	47	56	
ELECTRICAL		6	36	42	
FLIGHT ELECTRICAL CONNECTORS (USICU)	TBD	6	36	42	AVERAGE
MECHANICAL		3	11	14	
FLUID SERVICE QUICK DISCONNECTS	TBD	3	11	14	AVERAGE
PG-3 APPROVED GSE					
TOTAL		48	204	252	
ELECTRICAL		12	72	84	
AUDIO TEST SET (INCLUDING WIRELESS)	GC1P01309	6	36	42	AVERAGE
COMMON VIDEO INTERFACE UNIT	TBD	6	36	42	AVERAGE
CHANICAL		36	132	168	
CK SHIPPING CONTAINER	GX1P01094	3	11	14	AVERAGE
NTERFACE LEAK TEST HARDWARE	GQ1P01118	3	11	14	AVERAGE
COMMON BERTHING MECHANISM SIM. (CBM)	GF1P01138	3	11	14	AVERAGE
HATCH OPERATIONS KIT, 1G	GH1P01248	3	11	14	AVERAGE
HATCH RESTRAINT FIXTURE	GH1P01256	3	11	14	AVERAGE
DCC HANDLING SET	GH1P01260	3	11	14	AVERAGE
DCC SUPPORT STAND	GH1P01264	3	11	14	AVERAGE
ADAPTER, RACK HANDLING	GH1P01289	3	11	14	AVERAGE
PADS AND PROTECTIVE COVERS	GP1P01290	3	11	14	AVERAGE
ELEMENT ACCESS / TEST STAND (ROTATING)	GA1P01291	3	11	14	AVERAGE
INTRA-RACK DUCT FLOW BALANCING KIT	GQ1P01320	3	11	14	AVERAGE
PERSONNEL ACCESS FLOOR	TBD	3	11	14	AVERAGE
PG-3 APPROVED TSE		(PG-3 SUPPORT RESPONSIBILITY)			
TOTAL		0	0	0	
MECHANICAL					
HATCH INSTALLATION FIXTURE (CONTINGENCY AT KS	TH1P01192				

PROGRAM RESPONSIBILITY

REF: SB LIST UPDATED 11/23/1994

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
TOTAL PROGRAM RESPONSIBILITY GSE, & FLIGHT		96	340	436	
PROGRAM STUDY GSE					
TOTAL		33	36	69	
ELECTRICAL		6	36	42	
ISPR SIMULATOR	GF5P00721	6	36	42	AVERAGE
PROGRAM STUDY 1 GSE					
TOTAL		27	144	171	
ELECTRICAL		18	108	126	
UCS TEST SET	GC5W00527	6	36	42	AVERAGE
FLIGHT TEST SOFT-MATE CABLES	GE5P00697	6	36	42	AVERAGE
RSA SIMULATOR	GF5P00831	6	36	42	AVERAGE
CVIU (COMMON VIDEO INTERFACE UNIT) DVTM	GC5P00864	6	36	42	AVERAGE
MECHANICAL		9	33	42	
SPCU RACK HANDLING EQUIPMENT (RSA PROVIDED RACK)	GH5P00849	3	11	14	AVERAGE
SSRMS HANDLING EQUIPMENT (CSA PROVIDED ?)	GH5P00850	3	11	14	AVERAGE
METEOROID DEBRIS SHIELD HANDLING KIT	GH1P01075	3	11	14	AVERAGE
PROGRAM STUDY 2 GSE					
TOTAL		36	160	196	
ELECTRICAL		12	72	84	
NASDA DATA INTERFACE SIMULATOR	GF5P00606	6	36	42	AVERAGE
ESA DATA INTERFACE SIMULATOR	GF5P00619	6	36	42	AVERAGE
MECHANICAL		24	88	112	
CUPOLA HANDLING / ROTATION FIXTURE	GH5P00757	3	11	14	AVERAGE
WINDOW HANDLING / INSTALLATION FIXTURE	GT5P00759	3	11	14	AVERAGE
APAS HANDLING EQUIPMENT (RSA PROVIDED ?)	GH5P00834	3	11	14	AVERAGE
HANDLING KIT - CUPOLA	GH5P00841	3	11	14	AVERAGE
ROTATION FIXTURE FOR NODE / CUPOLA	GH5P00845	3	11	14	AVERAGE
PMA PRESSURE / LEAK TEST COVERS	GQ5P00854	3	11	14	AVERAGE
CUPOLA SHIPPING CONTAINER	GX5P00861	3	11	14	AVERAGE
AIRLOCK ACCESS KIT	GA2P20040	3	11	14	AVERAGE
PROGRAM STUDY 2 TSE		(SELECTED PG RESPONSIBILITY)			
TOTAL		0	0	0	
MECHANICAL					
SUPPORT STAND - CUPOLA	TH1901182				
MT HANDLING FIXTURE / SLING	ST2P20024				
MT TRANSLATION KIT (AIR BEARING)	ST2P2009				
DISU HANDLING SET (PG-2)	TH4-46184				
DISU TRANSPORT CONTAINER (PG-2)	TE4-46186				

INTERNATIONAL SPACE STATION ALPHA

INTERNATIONAL PARTNERS

PROVIDED

FLIGHT AND GROUND EQUIPMENT

INTERNATIONAL PARTNERS
FLIGHT AND GROUND EQUIPMENT

REF: TBD

SYSTEMS	PMN	JAN 95 BASELINE UNIQUE REPARABLE	JAN 95 BASELINE UNIQUE NON REPARABLE	JAN 95 BASELINE TOTAL UNIQUE	REFERENCE
TOTAL INTERNATIONAL PARTNERS GSE, TSE & FLIGHT		UNK	UNK	UNK	
CSA TOTAL		UNK	UNK	UNK	
CSA FLIGHT EQUIPMENT		UNK	UNK	UNK	
CSA GROUND EQUIPMENT		UNK	UNK	UNK	
ESA TOTAL		UNK	UNK	UNK	
ESA FLIGHT EQUIPMENT		UNK	UNK	UNK	
ESA GROUND EQUIPMENT		UNK	UNK	UNK	
NASDA TOTAL		UNK	UNK	UNK	
NASDA FLIGHT EQUIPMENT		UNK	UNK	UNK	
NASDA GROUND EQUIPMENT		UNK	UNK	UNK	
RSA TOTAL		UNK	UNK	UNK	
RSA FLIGHT EQUIPMENT		UNK	UNK	UNK	
RSA GROUND EQUIPMENT		UNK	UNK	UNK	

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Distribution:

NASA/KSC
CG-LMD/L. Russell (3)
CM-INT/S. Francois
CM-INT/D. Sias
CM-INT-1/P. W. Bogle
CM-INT-2/R. Lugo
CM-INT-3/J. Straiton
CM-INT-31/B. Webster
CM-INT-32/M. Lavoie
CM-INT-4/F. Stump (8)
CM-INT-5/W. Branning
CM-INT-6/B. Morris
CS-EED/D. Webb
DF-FED/G. Ray
DL-DSD/R. Hurt
DM-MED/F. Jankowski
DM-MED/L. Manfredi
IM-PEI/C. Figueroa
IM-SAT/L. Campbell
RM-SSP/D. Dibler
SK-SL/E. Crooks
TL/A. Montgomery
TL/G. Opresko

ROCKETDYNE/KSC
ROC-1/G. Rozewski

BOEING/KSC
SS/B. Anderson
SS/G. Bottomley
SS/E. DeJulio

EG&G/KSC
BOC-010

MDS&DS/KSC
F098/R. Shinego
F110/M. Jones
F120/C. Klienschmidt
F160/P. Simons
F200/J. Elbon
F296/M. Jager
F514/P. Tully
F540/R. Kurrus
F542/J. McFarland (3)
F550/W. Corbin
F560/J. Herron
F660/D. McClelland
Technical Doc Center (2)

Rockwell/KSC
ZL73/J. Zirkle
ZL73/A.M. Carey

NASA JSC
DE-44/K. Zingrebe
DT/D. Dahms
DT3/R. Lanier
DT3/W.Stayton
DT34/T. Fukuda
OC/T. Butina
OC/C. Epp
OC/V. Feng
OC/C. Howard
OC/M. Ramirez
OC/B. Robbins
OC/J. Watson
OC/G. Johnson

Allied Signal Technical Sycs/JSC
B36A-555/L. Livinston

BOEING JSC
HS-30/C. Armstorng
HS-30/R. Crawford
HS-30/J. Hedrick
HS-30/G. Hosmer
HS-30/S. Taylor

CAE-Link/JSC
5W/D. Durand

NASA HQ
JLG/S. Kinney

NASA/ARC
SCO-MM/M.Bryon
SCO-MM/T. Metevia

NASA/JPL
126-310/J. Block

NASA/LaRC
926/J.Antol

NASA/LeRC
SSC/S. Bankaitis

NASA/MSFC
EO21/C. Lewis

BOEING/MSFC
JS50/S Ezell

TBE/MSFC
JS45/W. Beaver

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DJ830/LOC A95/MS 11-3/P.Ludwig
SSD/MS A95/J830/17-B/R. Hayes
A3/MDa/49-2/M.A.Perry

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